



INDUSTRIALISED BUILDING SYSTEMS (IBS)

ROADMAP 2003-2010



**Lembaga Pembangunan
Industri Pembinaan Malaysia**

Construction Industry Development Board Malaysia

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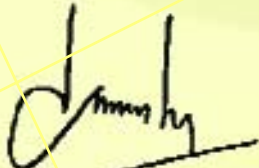
FOREWORD BY MINISTER OF WORKS

Malaysia is well known for its forward looking policies and strategies in the quest for global participation in all facets of industry. Being a global player in construction requires serious efforts towards adopting new systems and technologies par excellence with other developed and developing nations. The success of these efforts will enable us to penetrate the global market and export our professional and construction expertise while improving our own local development and management.

The Industrialised Building Systems (IBS) promises elevated levels of expertise throughout the industry, from manufacturers, installers, engineers, planners, designers, and developers. The benefits of IBS are numerous and far reaching. Reduced construction time, better site management, reduced wastage are but a few of these benefits, that will ultimately produce better products for the population.

The Malaysian government has spared no effort to bring IBS to the drawing tables of all professionals involved in the built environment. The IBS Roadmap 2003 -2010 has been endorsed by the Cabinet of Ministers to be the blueprint document for the industrialisation of the Malaysian construction sector. In ensuring its success, I urge the members of the construction industry to act upon our Government's call for the adoption of IBS.

In my final note, I would like to thank CIDB and the IBS Steering Committee and Working Group members for their efforts in formulating this document.



DATO' SERI S. SAMY VELLU
MINISTER OF WORKS, MALAYSIA

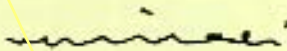


FOREWORD BY SECRETARY GENERAL, MINISTRY OF WORKS

The construction industry plays a crucial role in the Government's efforts to stimulate domestic economic activities and enhance growth. It is therefore important for the sector to continuously undertake measures to increase efficiency, quality and productivity. Towards this end, the use of the Industrialised Building Systems (IBS) is the right step in realising this objective.

The IBS, which enables on-site prefabricated or pre-cast building components manufactured at factories, will enable cost saving and quality improvement through the reduction of labour intensity and construction standardisation. Apart from this, it offers minimal wastage, less site materials, cleaner and neater environment, controlled quality, and lower total construction costs. Recognising the vast benefits and potential of the IBS, the Ministry of Works through its agencies such as the CIDB and the Public Works Department will continue to promote the use of IBS throughout the construction industry based on the IBS Roadmap 2003 - 2010.

The Ministry hopes that more private developers would support the Government's call by using higher percentage of IBS in the construction of housing and other building projects. Undoubtedly, with better productivity, quality and safety, IBS will contribute towards a better construction industry, as well as enhance the global competitiveness of Malaysian builders.



DATO' IZZUDDIN DALI
SECRETARY GENERAL, MINISTRY OF WORKS



FOREWORD BY CHIEF EXECUTIVE, CIDB

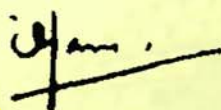
CIDB Malaysia formed the IBS Steering Committee in the effort to bring to the fore all the IBS-related issues in a framework that could dovetail into a feasible direction. The IBS Strategic Plan 1999 was the result of this effort and proved to be a good framework that set wheels in motion towards full adoption of IBS industry wide.

While many members of the industry are open to the idea, a major portion of the industry stakeholders are indifferent, perhaps due to resistance towards change, or insufficient information on the feasibility of change to IBS.

To address the many issues facing full adoption of IBS, CIDB has redesigned its strategies and formulated the IBS Roadmap 2003 -2010. The document has been fine-tuned by the IBS Steering Committee and the 5-M Working Groups.

Based on the 5-M strategy (Manpower, Materials-Components-Machines, Management-Processes-Methods, Monetary and Marketing) it has the aim of having an industrialised construction sector by the year 2010.

The committee members have put in invaluable time and thoughts to the detailing of IBS Roadmap 2003 - 2010 and it has since been approved by the Cabinet as the blueprint document for the industrialisation of the Malaysian construction sector. It is time that the industry reciprocates by adopting IBS in all ways possible to create a better future for generations to come and at the same time, raising the quality standard of the built environment and become a technologically advanced population.



DATO' Ir. HAMZAH HASSAN
CHIEF EXECUTIVE, CIDB



EXECUTIVE SUMMARY

With its current levels of quality, productivity, safety and excessive reliance on unskilled foreign workers, the state of the local construction industry is not in line with the future development of Malaysia.

Early efforts by the government to promote usage of Industrialised Building Systems (IBS) as an alternative to the conventional and labour intensive construction method has not made a headway. Therefore CIDB has redesigned its strategies and, with the guidance from the IBS Steering Committee, has formulated a roadmap based on the 5-M strategy (Manpower, Materials-Components-Machines, Management-Processes-Methods, Monetary and Marketing) with the target of having an industrialised construction industry and achieving Open Building by the year 2010.

In integrating its efforts from various organisations, targets have been set based on the five Ms in order to ensure the global competitiveness of Malaysian construction players through the usage of IBS.



BACKGROUND

The Industrialised Building Systems (IBS) is a construction process that utilises techniques, products, components, or building systems which involve prefabricated components and on-site installation. From the structural classification, there are five IBS main groups identified as being used in this country, and these are:

1



Pre-cast Concrete Framing, Panel and Box Systems

Pre-cast columns, beams, slabs, 3-D components (balconies, staircases, toilets, lift chambers), permanent concrete formwork, etc;

2



Steel Formwork Systems

Tunnel forms, beams and columns moulding forms, permanent steel formworks (metal decks), etc;

3



Steel Framing Systems

Steel beams and columns, portal frames, roof trusses, etc;

4



Prefabricated Timber Framing Systems

Timber frames, roof trusses, etc;

5



Block Work Systems

Interlocking concrete masonry units (CMU), lightweight concrete blocks, etc.



The use of IBS assures valuable advantages such as the reduction of unskilled workers, less wastage, less volume of building materials, increased environmental and construction site cleanliness and better quality control, among others.

These advantages also promote a safer and more organised construction site, and reduces the completion time of construction. Many world-class Malaysian developers have chosen IBS over the conventional methods for important projects such as the Petronas Twin Towers, Putrajaya, KL Sentral, and KLIA.

Even so, the usage of IBS in building is still low. From a survey conducted by CIDB Malaysia, the usage level of IBS in the local construction industry stands at only 15% (IBS Survey 2003). The early efforts of the Government to encourage the use of IBS in the construction sector has yet to garner a good response, and this sector is still practising conventional construction methods that have proven time and again to be wasteful, dangerous and messy. Relatively, the low labour cost in this country is the root cause of the industry failing to reform and being complacent with the current level of productivity, quality and safety. However, it cannot be disputed that to be competitive at the international level, it is important for the Malaysia construction industry to evolve and be ready for the globalisation era where an increase in productivity, quality and safety is a must.

The industry needs one fundamental plan that involves all the important aspects in this evolution process. In this respect, the IBS Roadmap 2003-2010 is formulated as a reference for all parties in implementing all programmes towards the modernisation of the Malaysian construction sector.

The IBS Roadmap 2003-2010 has been discussed and agreed upon at the national level through the IBS Steering Committee and Working Groups organised by CIDB Malaysia where the members are represented by the government sector, developers, manufacturers, contractors, professional bodies, higher learning institutions, associations, and other interested parties in the construction industry. The IBS Steering Committee and Working Groups have produced the IBS Roadmap 2003 - 2010 and will also ensure that its programs are implemented to meet the total industrialisation of Malaysia's construction industry by the year 2010.



Fine-tuning the IBS Strategic Plan 1999, the outlined strategies encompass manpower, material/ component/ machine, management/ process/ method, monetary (economy/financial) and marketing/ promotion. This roadmap has been endorsed by the Cabinet of Ministers as the blueprint for the total industrialisation of the construction sector and achieving Open Building by 2010.

Based on the IBS Roadmap 2003 - 2010, positive impacts from the fundamental proposal and new Government incentives are:

- 1 The industry will choose IBS which guarantees better quality, productivity and safety;
- 2 The enforcement of using Modular Coordination (MC) through Uniform Building By Laws (UBBL) will encourage standardisation and subsequently increase the usage of IBS components. It also encourages participation from manufacturers and assemblers, especially Bumiputera, to enter the market, thus reducing the price of IBS components. In essence, MC will facilitate open industrialisation.
- 3 A screening and selection programme based on IBS standard components will ensure that low quality products are not marketed in the country and this prevents the dumping of foreign IBS products in Malaysia. This aspect is important to avoid failures in IBS projects; and
- 4 By reducing wet-trades through IBS, the dependency on foreign workers will also diminish, thus gaining the billions of Ringgit currently being transferred out by the foreign workers to their home countries, and reducing inherent social problems involving these foreign workers.





MANPOWER

- Continue efforts to develop NOSS (National Occupational Skill Standards).
- Continue workers' training and certification programme to include all types of IBS.
- Commence the training programme on mould making for IBS components.
- Commence the industrial expertise awareness programme together with IBS manufacturers through on-job training for trainees.
- Commence the site supervisory training and certification programme which includes knowledge on IBS.
- Introduce Continual Professional Development (CPD) courses regarding IBS / Modular Coordination (MC) for members of Board of Engineers Malaysia and Board of Architects Malaysia.
- Introduce IBS / MC syllabus to diploma and degree level students in private and public higher learning institutions.
- Continue IBS / MC technical training courses.
- Generate a Labour Policy so that the number of foreign workers in the construction industry can be reduced in stages (reducing the foreign labour work force percentage of the total construction workers - from 75%¹ in 2003 to 55% in 2005 and 15% in 2009); especially those involved in wet-trades such as carpenters, plasterers, and barbers.

¹. 75 foreign workers out of 100 construction workers





MATERIALS

COMPONENTS & MACHINES

- Enforce the use of Modular Coordination based on MS1064 through Uniformed Building By Laws (UBBL) in 2004 by the local authorities.
- Continue publishing reference books and case study reports regarding IBS.
- Continue writing new Malaysian Standards (MS) covering all types of IBS.
- Continue writing new Construction Industry Standards (CIS).
- Develop a series of standard construction components and pre-approved building plans for the green lane approval programme by the local authorities.
- Develop the Buildability Design Code to encourage the use of standardised IBS components and also help the IBS manufacturers obtain continuous orders.
- Continue Research and Development (R&D) efforts to produce local IBS innovations.
- Generate the IBS Verification Programme and Resource Centre for selection process and certification, to supervise all IBS technologies offered for use by the Malaysian construction industry.





MANAGEMENT

PROCESS & METHODS

- Include the IBS / MC knowledge into the Standards of Practice and training modules for the training and certification of Project Managers.
- Offer specialised contractors training and certification programmes to cater for IBS related registration codes.
- Develop and run the Quality Assurance programme for each type of IBS.
- Develop Quality Management System (QMS) templates for design, production, and installation.
- Enforce Regulatory Compliance based on the standards for IBS components as the selection tool for IBS products starting from 2005.
- Develop software for MC components and dimensioning.
- Develop database for pre-approved building plans.
- Develop interactive database for components and costs for manufacturer-installers.
- Develop virtual reality software for architectural and structural components.
- Continually update the website to disseminate information on IBS, MC and OBS.





MONETARY

ECONOMIC & FINANCIAL

- Use IBS to construct 30% of the 150,000 units of houses proposed to be built by Syarikat Perumahan Negara Berhad (SPNB) under the 2003 Economy Stimulus Package (New Strategies Towards Enhancing the Country's Economic Growth)
- Continuously collect data for completed and on-going projects including IBS/MC pilot projects programmes.
- Conduct studies every 5 years to forecast the IBS components' needs for the Malaysian construction industry.
- Enforce IBS usage in government (building) projects in phases (from 30%² in 2004 to 70% in 2008).
- Introduce Buildability³ Programme beginning 2006 for private (building) projects and enforcing it through the Local Authorities in 2008.
- Offer tax reduction incentives for the Bumiputera component manufacturers starting in 2005.
- Offer green lane approval programme for users of the standard building plans designed in compliance to MC and standard building components beginning 2004.
- Offer levy exemptions from 2004 for low cost, low medium cost and medium cost housing projects and reduce 50% levy for other types of houses for the developers using modular dimension in their designs - after end of the enforcement period of the 2003 Economy Stimulus Package.
- Offer training schemes and financial loans for Bumiputera manufacturers and contractors (installers) beginning 2004.

² 30 government projects using IBS out of every 100 government projects.

³ Under this score system, the proposed building projects must achieve the minimum buildability score. High percentage of MC and IBS usage will generate high score.





MARKETING PROMOTION

- Conduct IBS Lobby Group programmes.
- Demonstrate IBS through IBS Village Showcase.
- Publish IBS product catalogues.
- Promote IBS more aggressively in the mass media.
- Continue IBS / MC road show programmes at the national and international levels.
- Continue seminar programmes at the national and international levels.
- Establish IBS as the main criteria for Malaysian Construction Industry Excellence Awards.
- Publish more IBS related books and journals.
- Produce more studies on IBS usage in the industry.
- Continuously conduct industry round table discussions on IBS to address the effectiveness of the programmes.
- Continue industry coordination programs through IBS Steering Committee and working groups.
- Introduce concept of Open Building Systems to the industry.



IBS STEERING COMMITTEE MEMBERS

SESSION 2003 - 2005

CHAIRMAN

Y. Bhg. Tan Sri Dato' Ir. Jamilus Hussain
KLIA Consultancy Services Sdn. Bhd.

IMMEDIATE PAST CHAIRMAN

Prof. Ir. Abang Abdullah b. Abang Ali
University Putra Malaysia

COMMITTEE MEMBERS

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Malaysia Structural Steel Association

Ir. Dr. Judin Abdul Karim (alt)
Malaysia Structural Steel Association

Encik Frank Fan
Taisei Corporation

Encik Goh Swee Seang
National Productivity Centre

Ir. Hooi Wing Chuen
Cement & Concrete Association of Malaysia

Encik Lai Voon Hon
Master Builders Association Malaysia

Ar. Lim Peng Keang
Malaysian Institute of Architects

Cik Mahanum Bt Itam
National Housing Department

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Real Estate and Housing Developers Association
Malaysia

Dr. Mohd Dahlan Bin Jantan
Forest Research Institute Malaysia

Dr. Mohd Jamil Sulaiman
SIRIM Berhad

Prof. Madya Ir Dr Mohd Salleh Jaafar

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Public Works Department

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Ahmad Zaki Resources Bhd.

Ir. Yim Hon Wa
Institution of Engineers Malaysia

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IBS 5M WORKING GROUP MEMBERS

MANPOWER

CHAIRMAN

Encik Lai Voon Hon
Master Builders Association Malaysia

COMMITTEE MEMBERS

Encik Frank Fan
Taisei Corporation

Dr. Soh Chee Seng
Ministry of Human Resources

Prof. Madya Ir. Dr. Wahid b. Omar
University Technology Malaysia

Y.Bhg. Dato' Wan Zakariah Wan Muda
Ahmad Zaki Resources Bhd.

Encik Shahrul Nizar Shaari
Construction Industry Development Board Malaysia

MATERIALS, COMPONENTS & MACHINES

CHAIRMAN

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Malaysian Institute of Architects

COMMITTEE MEMBERS

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Malaysia Structural Steel Association

Ir. Dr. Judin Abdul Karim (alt)
Malaysia Structural Steel Association

Ir. Hooi Wing Chuen
Cement & Concrete Association of Malaysia

Dr. Mohd Jamil Sulaiman
SIRIM Berhad

Hajjah Norasiah Haji Yahya
Malaysian Human Settlement and Urbanisation
Research Institute

Dr. Tan Yu Eng
Forest Research Institute Malaysia

Ir. Yim Hon Wa
Institution of Engineers Malaysia

Ir. Ramuseren a/I Muthu
Construction Industry Development Board Malaysia



MANAGEMENT, PROCESS & METHOD

CHAIRMAN

Encik Goh Swee Seang
National Productivity Centre

COMMITTEE MEMBERS

Prof. Madya Ir Dr Mohd Salleh Jaafar
University Putra Malaysia

Dr. Shafie Karimin
Project Management Institute, Malaysia Chapter

Puan Noridah Shaffii
Construction Industry Development Board Malaysia

MONETARY, ECONOMIC & FINANCIAL

CHAIRMAN

Y.Bhg. Datuk Haji Md Ramly Bin Mohamad
Malay Chambers of Commerce Malaysia

COMMITTEE MEMBERS

Ir. Jamaluddin B. Non
Malay Contractor Association of Malaysia

Cik Mahanum Bt Itam
National Housing Department

Ar. Noorisah Abd Shukor
Public Works Department

Ir. Elias Ismail
Construction Industry Development Board Malaysia



MARKETING & PROMOTION

CHAIRMAN

Y.Bhg. Dato' Michael Yam Kong Choy
Real Estate and Housing Developers Association

COMMITTEE MEMBERS

Encik Lai Voon Hon
Master Builders Association Malaysia

Ar. Lim Peng Keang
Malaysian Institute of Architects

Prof. Madya Ir. Dr Mohd Salleh Jaafar
University Putra Malaysia

Encik Ong Sin Oong
Federation Manufacturers of Malaysia

Encik Sazali Che Amat
Construction Industry Development Board Malaysia



IBS PROJECTS IN MALAYSIA

Petronas Twin Tower



Monorail



Vista Komenwel



Aquatic Stadium, Bukit Jalil



KL Tower



Putrajaya Bridge



Shopping Centre,
Mutiara Damansara



Putra Jaya
Housing



Light Rail Transit



Teachers Quarters



KL Central



National Stadium
Bukit Jalil



Kuala Lumpur
International Airport
(KLIA)



IBS ROADMAPS 2003 - 2010

ACTIVITIES	1998-2002	2003	2004	2005	2006	2007	2008	2009	2010	
TRAINING AND CERTIFICATION FOR WORKERS	PRECAST ELEMENTS INSTALLATION (SLINGING, SCAFFOLDING AND BASIC RC SKILLS) AND LIGHTWEIGHT BLOCKS LAYING TRAINING PROGRAMMES	TO START PROGRAMME FOR LIGHTWEIGHT STEEL ROOF TRUSSES & FRAMES INSTALLATION	TO START PROGRAMME FOR CARPENTRY (INCLUDING PREFABRICATED TIMBER ROOF TRUSSES ASSEMBLY)		TO START PROGRAMME FOR PREFABRICATED TIMBER FRAMES ERECTION					
		TO START PROGRAMME FOR APPRENTICESHIP PROGRAMMES WITH MANUFACTURERS FOR ON JOB SKILLS	TO START PROGRAMME FOR COMPONENT CASTING MOULDS FABRICATION							
			TO START PROGRAMME FOR STEEL FRAMES (HOT-ROLLED SECTIONS) ERECTION							
NEW NATIONAL OCCUPATIONAL SKILL STANDARDS (NOSS)		(DEVELOPMENT OF NOSS TO SUPPORT ALL OF THE PROGRAMMES ABOVE)	(DEVELOPMENT OF NOSS TO SUPPORT ALL OF THE PROGRAMMES ABOVE)		(DEVELOPMENT OF NOSS TO SUPPORT ALL OF THE PROGRAMMES ABOVE)					
TRAINING AND CERTIFICATION FOR SITE SUPERVISORS	COURSES FOR SITE SUPERVISORS: CIVIL & STRUCTURAL, BUILDING & ARCHITECTURAL AND MECHANICAL & ELECTRICAL		TO PRODUCE REVISED SYLLABUS FOR SITE SUPERVISORS TRAINING AND CERTIFICATION PROGRAMME	TO TRAIN AND CERTIFY SITE SUPERVISORS (NEW SYLLABUS)		TO REVISE SYLLABUS FOR SITE SUPERVISORS TRAINING AND CERTIFICATION PROGRAMME				
NEW PROFESSIONALS	MC TRAINING MODULES PRODUCED IN 2001		TO INCORPORATE SYLLABUS ON IBS/MC AT DIPLOMA AND DEGREE LEVEL							
	NUMEROUS IBS/MC COURSES CONDUCTED		TO INCORPORATE IBS/MC IN CPD COURSES FOR ARCHITECTS AND ENGINEERS							
	TRAIN THE TRAINERS PROGRAMME IN 2001									
	MC COURSES FOR GOVERNMENT AGENCIES: JKR, JPN, LOCAL AUTHORITIES, PKNS, IKRAM, UPM, USM, UTM	TO HAVE SEMINARS AND PRECAST CONCRETE AND MC TECHNICAL COURSES	TO HAVE SEMINARS AND PRECAST CONCRETE, STEEL, TIMBER AND MC TECHNICAL COURSES	TO HAVE SEMINARS AND PRECAST CONCRETE, STEEL, TIMBER AND MC TECHNICAL COURSES	TO HAVE SEMINARS AND PRECAST CONCRETE, STEEL, TIMBER AND MC TECHNICAL COURSES	TO HAVE SEMINARS AND PRECAST CONCRETE, STEEL, TIMBER AND MC TECHNICAL COURSES	TO HAVE SEMINARS AND PRECAST CONCRETE, STEEL, TIMBER AND MC TECHNICAL COURSES	TO HAVE SEMINARS AND PRECAST CONCRETE, STEEL, TIMBER AND MC TECHNICAL COURSES	TO HAVE SEMINARS AND PRECAST CONCRETE, STEEL, TIMBER AND MC TECHNICAL COURSES	TO HAVE SEMINARS AND PRECAST CONCRETE, STEEL, TIMBER AND MC TECHNICAL COURSES
	MC COURSES FOR ASSOCIATIONS: IEM, MBAM, FMM									
LABOUR POLICY	SKILLED FOREIGN WORKERS ALLOWED TO STAY MORE THAN 5 YEARS			TO REDUCE PERCENTAGE OF FOREIGN WORKERS TO 55% (REDUCTION OF FOREIGN WORKERS BY TRADES: WET-TRADES)		TO REDUCE PERCENTAGE OF FOREIGN WORKERS TO 25%		TO REDUCE PERCENTAGE OF FOREIGN WORKERS TO 15%		
		(FOREIGN WORKERS ARE 75% OF THE TOTAL CONSTRUCTION WORKERS)								

Manpower

Management / Process / Method	ACTIVITIES	1998-2002	2003	2004	2005	2006	2007	2008	2009	2010	
	PROJECT MANAGEMENT	GENERAL PROJECT MANAGEMENT COURSES			TO PUBLISH STANDARD OF PRACTICE FOR PROJECT MANAGEMENT						
					TO PRODUCE TRAINING MODULES, TRAINING PROGRAMMES AND TRAIN THE TRAINERS PROGRAMMES	TO TRAIN AND CERTIFY PROJECT MANAGERS		TO PRODUCE REVISED TRAINING MODULES, TRAINING PROGRAMMES AND TRAIN THE TRAINERS PROGRAMMES			
	CONTRACTORS (ASSEMBLERS) TRAINING PROGRAMMES	GENERAL COURSES FOR CONTRACTORS		SPECIALISED CONTRACTORS PROGRAMME FOR IBS RELATED REGISTRATION CODES	TO TRAIN AND CERTIFY CONTRACTORS FOR IBS RELATED REGISTRATION CODES		TO REVISE TRAINING PROGRAMME FOR CONTRACTORS (FOR IBS RELATED REGISTRATION CODES)				
	QUALITY PROGRAMMES	QUALITY MANAGEMENT SYSTEMS ACTIVITIES (INC. ISO 9001 & ISO DIY PROGRAMMES)	TO PRODUCE QUALITY ASSURANCE PROGRAMME ON TIMBER ROOF TRUSSES (REFER TO MATERIALS / COMPONENTS / MACHINES ROADMAP)	TO PRODUCE QUALITY ASSURANCE PROGRAMME ON PRECAST, BLOCKWORKS & STEEL ROOF TRUSSES	TO PRODUCE QUALITY ASSURANCE PROGRAMME ON STEEL FRAMES & SYSTEM FORMWORKS	TO PRODUCE QUALITY ASSURANCE PROGRAMME ON TIMBER FRAMES					
				TO PRODUCE QUALITY MANAGEMENT SYSTEMS TEMPLATE DOCUMENT FOR IBS (DESIGN, MANUFACTURING, ASSEMBLY & COORDINATION)	TO ENFORCE REGULATORY COMPLIANCE TO STANDARDS FOR IBS COMPONENTS (PRODUCT VETTING PROGRAMME)						
	IT IN CONSTRUCTION PROGRAMMES	INFO ON IBS/MC PROVIDED IN CIDB WEBSITE	TO UPDATE INFO FOR NEW CIDB WEBSITE	TO RELEASE MC CHECKER SOFTWARE FOR DESIGNERS	TO HAVE PRE-APPROVED PLANS DATABASE	TO HAVE INTERACTIVE MANUFACTURERS/INSTALLERS COMPONENTS AND COST DATABASE	TO RELEASE INTEGRATED ARCHITECTURAL-STRUCTURAL COMPONENTS SOFTWARE (VIRTUAL REALITY)	TO LAUNCH OBS WEBSITE			
		PROJECT MANAGEMENT, CAD AND OTHER IT COURSES			TO RELEASE SOFTWARE ON MS1064 PREFERRED SIZES COMPONENTS						

Monetary (Economic / Financial)	ACTIVITIES	1998-2002	2003	2004	2005	2006	2007	2008	2009	2010	
	STUDIES		TO BEGIN DATA COLLECTION (CONTINUOUS) ON ALL IBS PROJECTS			TO PUBLISH REPORT ON IBS/MC PILOT PROJECT					
					TO COMPLETE 5-YEAR DEMAND STUDY				TO COMPLETE 5-YEAR DEMAND STUDY		
	INCENTIVES				TO BEGIN GREEN LANE PROGRAMME FOR PRE-APPROVED PLANS						
						TO BEGIN TAX REDUCTION PROGRAMME FOR BUMIPUTERA COMPONENT MANUFACTURERS					
					TO ABOLISH LEVY FOR LOW, LOW-MEDIUM & MEDIUM COST HOUSES; AND TO SET 50% LEVY REDUCTION FOR OTHER TYPES (FOR DESIGNS ACCORDING TO MC ONLY) (AFTER END OF 2003 STIMULUS PACKAGE)						
	PROCUREMENT POLICY	30% OF GOVERNMENT PROJECTS TO USE IBS (PROPOSED)	TO SET 30% OF SPNB HOUSING UNDER 2003 STIMULUS PACKAGE TO USE IBS	TO HAVE 30% OF TOTAL GOVERNMENT (BUILDING) PROJECTS TO USE IBS		TO HAVE 50% OF TOTAL GOVERNMENT (BUILDING) PROJECTS TO USE IBS			TO HAVE 70% OF TOTAL GOVERNMENT (BUILDING) PROJECTS TO USE IBS		
						TO INTRODUCE MINIMUM BUILDABILITY SCORE FOR ALL PRIVATE DEVELOPERS			TO ENFORCE MINIMUM BUILDABILITY SCORE FOR ALL PRIVATE DEVELOPERS		
	BUMIPUTERA ENTREPRENEUR DEVELOPMENT				TO BEGIN BUMIPUTERA STRUCTURAL AND ARCHITECTURAL IBS MANUFACTURERS TRAINING/FINANCIAL SCHEME	TO HAVE 25 BUMIPUTERA STRUCTURAL AND ARCHITECTURAL IBS COMPONENT MANUFACTURERS			TO HAVE 50 BUMIPUTERA STRUCTURAL AND ARCHITECTURAL IBS COMPONENT MANUFACTURERS		TO HAVE 150 BUMIPUTERA STRUCTURAL AND ARCHITECTURAL IBS COMPONENT MANUFACTURERS
				TO BEGIN BUMIPUTERA SPECIALISED IBS CONTRACTORS (INSTALLERS) TRAINING SCHEME	TO HAVE 500 BUMIPUTERA SPECIALISED IBS CONTRACTORS (INSTALLERS)			TO HAVE 1000 BUMIPUTERA SPECIALISED IBS CONTRACTORS (INSTALLERS)		TO HAVE 2500 BUMIPUTERA SPECIALISED IBS CONTRACTORS (INSTALLERS)	

ACTIVITIES	1998-2002	2003	2004	2005	2006	2007	2008	2009	2010	
AWARENESS & PROMOTION	PRODUCT EXHIBITIONS & SEMINARS		TO HAVE INTERNATIONAL ROADSHOWS / TRADE MISSIONS		TO HAVE INTERNATIONAL ROADSHOWS / TRADE MISSIONS		TO HAVE INTERNATIONAL ROADSHOWS / TRADE MISSIONS			
	IBS/MC CEO COURSE IN 2002	TO HAVE NATIONAL IBS ROADSHOWS	TO HAVE NATIONAL IBS ROADSHOWS	TO HAVE NATIONAL IBS ROADSHOWS	TO HAVE NATIONAL IBS ROADSHOWS	TO HAVE NATIONAL IBS ROADSHOWS	TO HAVE NATIONAL IBS ROADSHOWS	TO HAVE NATIONAL ROADSHOWS ON OPEN BUILDING SYSTEMS (OBS)		
		TO HAVE MEDIA EXPOSURE IN TRADE MAGAZINES & NATIONAL PAPERS' SUPPLEMENTS	TO HAVE MEDIA EXPOSURE IN TRADE MAGAZINES & NATIONAL PAPERS' SUPPLEMENTS	TO HAVE MEDIA EXPOSURE IN TRADE MAGAZINES & NATIONAL PAPERS' SUPPLEMENTS, TV & RADIO	TO HAVE MEDIA EXPOSURE IN TRADE MAGAZINES & NATIONAL PAPERS' SUPPLEMENTS, TV & RADIO	TO HAVE MEDIA EXPOSURE IN TRADE MAGAZINES & NATIONAL PAPERS' SUPPLEMENTS, TV & RADIO	TO HAVE MEDIA EXPOSURE IN TRADE MAGAZINES & NATIONAL PAPERS' SUPPLEMENTS, TV & RADIO	TO HAVE MEDIA EXPOSURE IN TRADE MAGAZINES & NATIONAL PAPERS' SUPPLEMENTS, TV & RADIO ON OBS		
		TO PUBLISH PRECAST CONCRETE PRODUCT CATALOGUE	TO PUBLISH ANNUAL IBS PRODUCT CATALOGUE	TO PUBLISH ANNUAL IBS PRODUCT CATALOGUE	TO PUBLISH ANNUAL IBS PRODUCT CATALOGUE	TO PUBLISH ANNUAL IBS PRODUCT CATALOGUE	TO PUBLISH ANNUAL IBS PRODUCT CATALOGUE	TO PUBLISH ANNUAL IBS PRODUCT CATALOGUE	TO PUBLISH ANNUAL OBS PRODUCT CATALOGUE	
	MC LOGO LAUNCHING IN 2000	TO FORM IBS LOBBY GROUP	TO LAUNCH PUBLIC AWARENESS PROGRAMME	TO COMPLETE IBS VILLAGE ('SHOWCASE')						
SEMINARS & WORKSHOPS	ZERO DEFECT PROGRAMME LAUNCHING & ROADSHOWS									
	IBS/MC COLLOQUIUMS IN 1998									
	IBS STRATEGIC PLAN WORKSHOP IN 1999									
	IBS NATIONAL SEMINAR IN 2001	TO ORGANIZE IBS INTERNATIONAL SEMINAR 2003	TO ORGANIZE IBS INTERNATIONAL SEMINAR 2004	TO ORGANIZE IBS INTERNATIONAL SEMINAR 2005	TO ORGANIZE IBS INTERNATIONAL SEMINAR 2006	TO ORGANIZE IBS INTERNATIONAL SEMINAR 2007	TO ORGANIZE IBS INTERNATIONAL SEMINAR 2008	TO ORGANIZE OBS INTERNATIONAL SEMINAR 2009		
	MC BRAINSTORMING WORKSHOP IN 2002									
	IBS/MC TECHNICAL COURSES									
ANNUAL IBS AWARD	BEST IBS PROJECT AWARD IN 2001	TO SET IBS USAGE AS MAIN CRITERIA FOR MALAYSIAN CONSTRUCTION INDUSTRY EXCELLENCE AWARD 2003	TO SET IBS USAGE AS MAIN CRITERIA FOR MALAYSIAN CONSTRUCTION INDUSTRY EXCELLENCE AWARD 2004	TO SET IBS USAGE AS MAIN CRITERIA FOR MALAYSIAN CONSTRUCTION INDUSTRY EXCELLENCE AWARD 2005	TO SET IBS USAGE AS MAIN CRITERIA FOR MALAYSIAN CONSTRUCTION INDUSTRY EXCELLENCE AWARD 2006	TO SET IBS USAGE AS MAIN CRITERIA FOR MALAYSIAN CONSTRUCTION INDUSTRY EXCELLENCE AWARD 2007	TO SET IBS USAGE AS MAIN CRITERIA FOR MALAYSIAN CONSTRUCTION INDUSTRY EXCELLENCE AWARD 2008	TO SET OBS USAGE AS MAIN CRITERIA FOR MALAYSIAN CONSTRUCTION INDUSTRY EXCELLENCE AWARD 2009		
EXPERT INPUT/ TECHNOLOGY TRANSFER	IBS/MC PUBLICATIONS IN MAGAZINES	TO PUBLISH IBS SURVEY REPORT 2003	TO BEGIN PUBLISHING (QUARTERLY) IBS MAGAZINE	TO PUBLISH IBS SURVEY REPORT 2005		TO PUBLISH IBS SURVEY REPORT 2007		TO BEGIN PUBLISHING (QUARTERLY) OBS MAGAZINE		
	STUDIES BY IBS FOCUS GROUPS	TO PUBLISH IBS BOOK			TO PUBLISH REVISED IBS BOOK			TO PUBLISH REVISED IBS BOOK- ADD OBS CONCEPT		
	OPEN BUILDING TECHNICAL CONFERENCE IN 2000		TO ORGANIZE ROUND TABLE DIALOGUE ON IBS 2004	TO ORGANIZE ROUND TABLE DIALOGUE ON IBS 2005	TO ORGANIZE ROUND TABLE DIALOGUE ON IBS 2006	TO ORGANIZE ROUND TABLE DIALOGUE ON IBS 2007	TO ORGANIZE ROUND TABLE DIALOGUE ON IBS 2008	TO ORGANIZE ROUND TABLE DIALOGUE ON OBS 2009		
	CTB WORLD BUILDING CONGRESS IN 2001									
	TECHNICAL VISITS TO MC PRACTISING COUNTRIES IN 2002									
INDUSTRY COORDINATION	IBS STEERING COMMITTEE FORMED	TO FORM "5-M" WORKING GROUPS (CONTINUOUS ACTIVITIES)						TO FORM OBS STEERING COMMITTEE		
	STRATEGIC PLAN PUBLISHED IN 1999	TO PRODUCE IBS ROADMAP 2003-2010						TO PRODUCE OBS ROADMAP 2010-2020		

Marketing / Promotion